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Section III:

AMENDMENT UNDER 37 CFR §1.121 to the

DRAWINGS

No amendments or changes to the Drawings are proposed.

Section IV:
AMENDMENT UNDER 37 CFR §1.121
REMARKS

Rejections under 35 U.S.C. §102(e) over Abir

In the Office Action, independent claims 1, 5 and 9 were rejected under 35 U.S.C. §102(e) for lack of novelty as being anticipated by U.S. Patent Number 6,738,827 to Abir (hereinafter "Abir").

For reference during the following discussion, a domain name or Universal Resource Locator ("URL") is defined has having a protocol identifier, a top-level identifier (e.g. .com, .org, .net, etc.), a registered domain server name or second-level identifier, an optional third-level identifier (e.g. www, www2, etc.), zero or more subdomains, zero or more subdirectories, and zero or more resource names.

For example, in the URL:

http://www.support.ibm.com/index.htm

The protocol identifier is "http://" for hypertext transfer protocol, the top-level identifier is ".com", the registered domain server name with extension is "ibm", the subdomain is "support", the third-level identifier is "www", and the resource is the HTML document named "index.htm". Each of these portions of the domain name is separated by a Latin period "." character, except for the protocol identifier and the optional third-level identifier.

It is possible to have sub-subdomains, such as the following where "linux" is the subdomain of the subdomain of "support":

http://www.linux.support.ibm.com/index.htm

Note that a period "." character is used again to delimit the sub-subdomain from the third-level identifier "www" and the subdomain "support".

Teachings of the Abir Reference. Abir teaches a first step or phase of converting an English or Latin-based domain name by identifying pre-determined "standard parts" of a URL, such as the strings "http://www", ".com", or "HTM" (see figure 1 #100, col. 4 lines 29 - 31). These "standard parts" are exchanged for alternate language (e.g. Hebrew in their example) strings of characters (fig. 1 #102, col. 4 lines 31 - 36), which are not compatible with the Internet Protocol or Domain Name Server protocols.

In other words, Abir first converts any top-level portions, third-level portions, file extensions, and protocol identifiers to pre-determined alternate language characters or strings. Note that no parsing of the URL is specified, but just finding of pre-determined "standard portions" is disclosed. These can be referred to as "standard portions" by Abir because there are a finite set of options for these portions of a URL (e.g. http, ftp, www, .com, .org, .edu., .gov, .co, .htm, .php, .jsp, .html, etc.)

Then, Abir teaches treating the entire set of characters which are not "standard parts" as a string to be converted to the alternate language using word-for-word conversion, and letter-for-letter conversion when words are not recognized. Abir discloses reversing the order of words if the alternate language is a right-to-left interpreted language.

Please note that Abir is silent as to maintaining the original order of the subdomains and domain names, and is silent as to using the "." character as a full stop character while independently reordering the characters within each portion between the full stop characters.

When applying conventional natural language translation techniques, a Latin period "." character is typically interpreted as signaling the end of a sentence construct within a paragraph, unless it is immediately followed by a paragraph termination character, such as a hard line feed ("LF") or carriage return ("CR") character. So, for example, if the *words of* the phrase:

"I own a dog. It is a good dog. <CR>"

were re-ordered for right-to-left languages and interpreted using conventional natural language translation techniques, it would appear in the following order:

"dog good a is It. dog a own I."

Notice that the *sentences* reversed order, as well as the words within the sentences. This is a fundamental problem of the Unicode Bidirectional Algorithm ("BIDI") as applied to domain names, which arises due to the fact that the algorithm was designed to process natural language text (e.g. sentences and paragraphs), not URLs. This is also a problem unrecognized and unsolved by Abir, as Abir is silent regarding processing of the portions *between full stop delimiters*.

For example, using the Unicode BIDI process or Abir process, the following URL:

http://www.applyforaloan.bigbank.com

would be recognized as two sentences, and would be reordered for right-to-left readers as follows (including character reordering):

<A>knabgib.naolarofylppa<B>

where <A> is Abir's substitution for "http://www", and <B> is Abir's substitution for ".com". Note that the reversal of the order of the "sentences" has now made the domain name incorrectly ordered (e.g. "bigbank" became a subdomain, and "applyforaloan" became a domain name).

Our invention, however, first parses the URL by using a full stop character (e.g. ".") as a delimiter between "labels". So, in the example of:

http://www.applyforaloan.bigbank.com

Our invention would find four "labels" in this example URL:

Label_1 = "http://www"
Label_2 = "applyforaloan"
Label_3 = "bigbank"
Label_4 = "com"

The characters *within each label* are then re-ordered according to right-to-left reading order for recognized words in the target alternate language, independent of the content of the other labels:

Label_1' = "http://www"

Label_2' = " naolarofylppa"

Label_3' = "knabgib"

Label_4' = "com"

Because our invention *preserves the original order* of the labels (e.g. doesn't treat them as sentences within a paragraph as the Unicode process does), the proper relationship of the portions of the URL are preserved while the characters within the portions are reversed for right-to-left reading:

http://www.naolarofylppa.knabgib.com

Abir is silent as to parsing the URL into labels using a full-stop character is a delimiter between labels, reordering of the characters *within each label,* and producing a URL having the labels in the original order of the original URL but with the reordered characters within the labels. We have amended our claims to specify this difference.

In summary, Abir teaches handling of URLs by separating out "standard portions" and then translating everything in between the standard portions as if it were natural language text, not dividing the URL into labels according to full stop characters as label delimiters, preserving the original order of the labels, and reordering characters within labels, as we have claimed. Thus, applicant requests withdrawal of the rejections, and allowance of claims 1, 5 and 9 as amended.
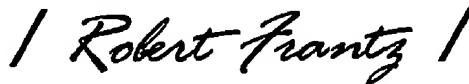
Rejections under 35 U.S.C. §103(a) over Abir in view of Moser

In the Office Action, independent claims 2 - 4, 6 - 8, and 10 - 12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Abir in view of US Patent 6,275,789 to Moser (hereinafter "Moser").

Moser was employed to teach our claimed handling of hyphen-minus characters as white space. However, Moser is silent as to using full stop delimiter to divide the URL into labels, reorder the characters within the labels, and then produce a URL having the character-reordered labels in the original label order, as previously discussed.

Therefore, applicant requests withdrawal of the rejections, and allowance of claims 2 - 4, 6 - 8, and 10 - 12, as well as allowance of new claims 13 - 15.

Respectfully,

/ Robert Frantz /

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